Utah Stakeholder Working Group on Climate Change, January 2, 2007
Background Memo on Activities in Other Western States
DRAFT 12/26/06

I. State and Regional Advisory Groups[1]

II.

State/Regional Effort	Objectives	Status
Arizona Climate Change Advisory Group: 35 member stakeholder group, 5 sector-based technical work groups	Prepare GHG inventory, develop recommendations for reducing GHG emissions	Action plan released 8/06: 49 recommendations; overarching goal of reducing GHG emissions to 2000 levels by 2020 and 50% cut by 2040
New Mexico Climate Change Advisory Group: 37 member stakeholder group, 5 sector-based technical work groups	Develop projection of future GHG emissions, recommendations for reducing GHG emissions to 2000 level by 2010, 10% cut by 2020, and 75% cut by 2050	Final plan released 12/06: 69 policy recommendations; cut emissions by 50% by 2020
Colorado Climate Action Panel: 35 member stakeholder group, 5 sector-based technical work groups; established 8/06.	Prepare inventory and forecast of GHG emissions, develop recommendations for actions to reduce Colorado's contribution and vulnerability to climate change	Panel to meet six times between 11/06 and 12/07
Montana Climate Change Advisory Committee: 18 member stakeholder group; established 11/05	Develop GHG inventory, develop policy recommendations to reduce GHG emissions	First meeting held 7/2006; plan due 7/07
Oregon Governor's Advisory Group on Global Warming: 28 member stakeholder group, established in 2004	Develop GHG reduction plan for Oregon's contribution to West Coast Governors' Global Warming Initiative	Oregon Strategy for Greenhouse Gas Reductions issued 12/04: reduce GHG emissions by 10% from 1990 levels by 2020; 75% cut by 2050
California Climate Change Advisory Committee: 21 members	Make recommendations to California Energy Committee on ways to implement international and national climate change requirements	California law requires state officials to develop a program to reduce GHG emissions by 25% from 1990 levels by 2012 and 80% by 2050; mandatory caps begin in 2012; mandatory reporting rules due in 2009
West Coast Governors' Global Warming Initiative	Governors agreed in 2003 to develop joint policy recommendations to improve energy efficiency, expand use of renewables, develop coordinated GHG inventory	Approved 36 recommendations in 11/04: increase retail energy sales from renewable sources by 1% a year through 2015 and achieve 15% savings in energy through efficiency measures by 2015
The Regional Greenhouse Gas Initiative (RGGI: a cooperative effort by 9 Northeast and Mid-Atlantic states)	States agreed to stabilize CO2 emissions from power plants from 2009 to 2015, then reduce them by 10% by 2019	12/05: 7 states announced an agreement to implement the RGGI; 8/06: participating states issued a model rule for the RGGI program to guide individual state programs.
Midwest Regional Greenhouse Gas Registry (Illinois, Indiana, Michigan, Ohio, and Wisconsin	"Ensure a credible GHG measurement and reporting platform"	8/06: guidance protocols and calculation tools to be available to states

Western Regional Air Partnership	Developing state GHG inventories and registries; educating member states on climate science and policy	Workshop on voluntary registries held 7/06

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II. **Energy and Climate Policy Options**

1. Overview of options for reducing the use of fossil fuel-based energy and GHG emissions include the following (these options are discussed in detail in the associated spreadsheet):

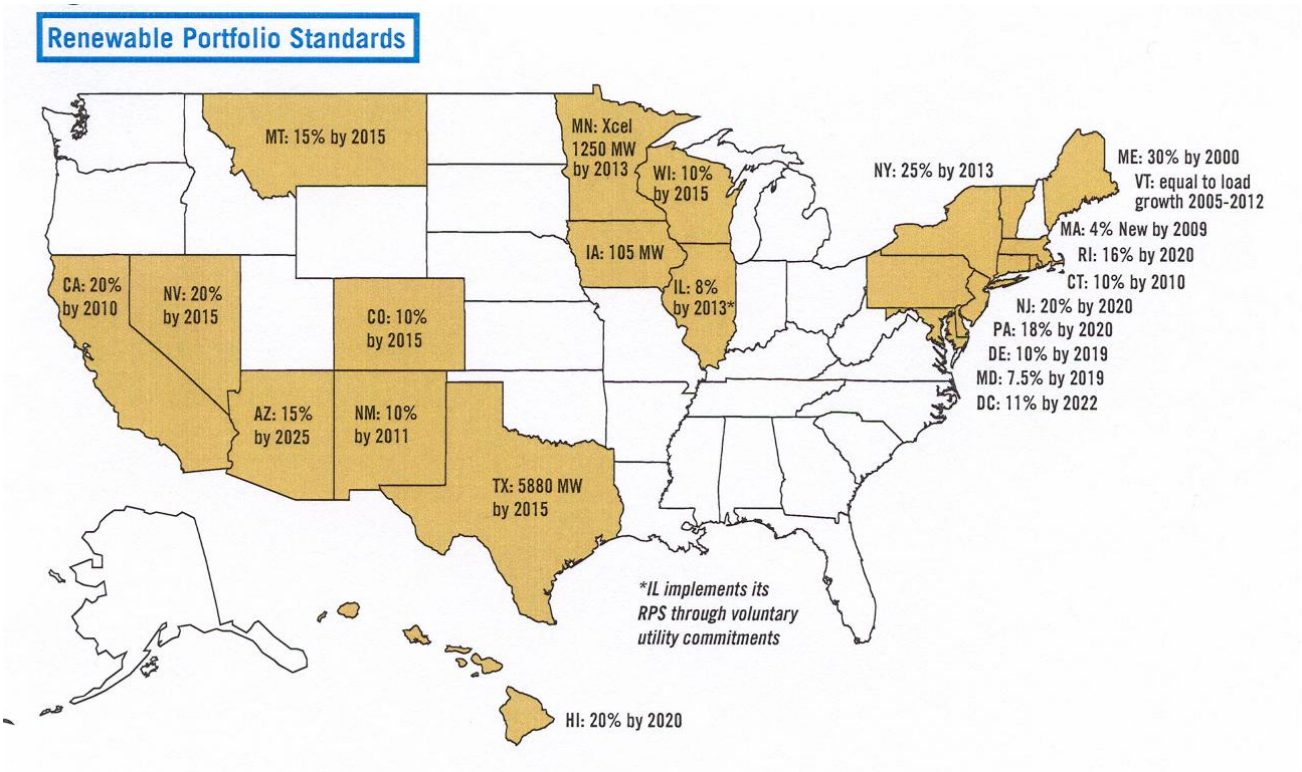
- Energy Supply
    - Renewable and low-emitting energy (incentives, requirements, R&D)
    - Advanced fossil fuel strategies (IGCC, carbon capture and sequestration)
    - Other electricity measures (fuel switching to less carbon-intensive fuels, nuclear power)
    - Distributed generation (combined heat and power generation)
    - Emissions policies (GHG registry, GHG emission reduction targets, carbon tax)
    - Grid and utility policies (net metering, reducing transmission loss)
    - Education/awareness
- Residential/commercial/industrial
    - Residential (appliance efficiency standards, DSM programs, consumer education)
    - Commercial (improved building codes, tax and other incentives for renewables)
    - Industrial (fuel switching, CHP)
- Agriculture
    - Production of fuels and electricity (ethanol, biodiesel and other fuels)
    - Fertilizer and manure management (composting, change feedstocks)
    - Soil carbon management (no till conservation, rotational grazing)
    - Land use (preserve open spaces)
- Forestry
    - Biomass protection and management (reforestation, fire management, wood for fuel)

2. Leading State Clean Energy and GHG Policy Initiatives

Renewable Portfolio Standards:

Twenty-two states and the District of Columbia require that electric utilities generate a specified amount of energy from renewable sources, typically described as either a percentage of total production or actual MW of power.

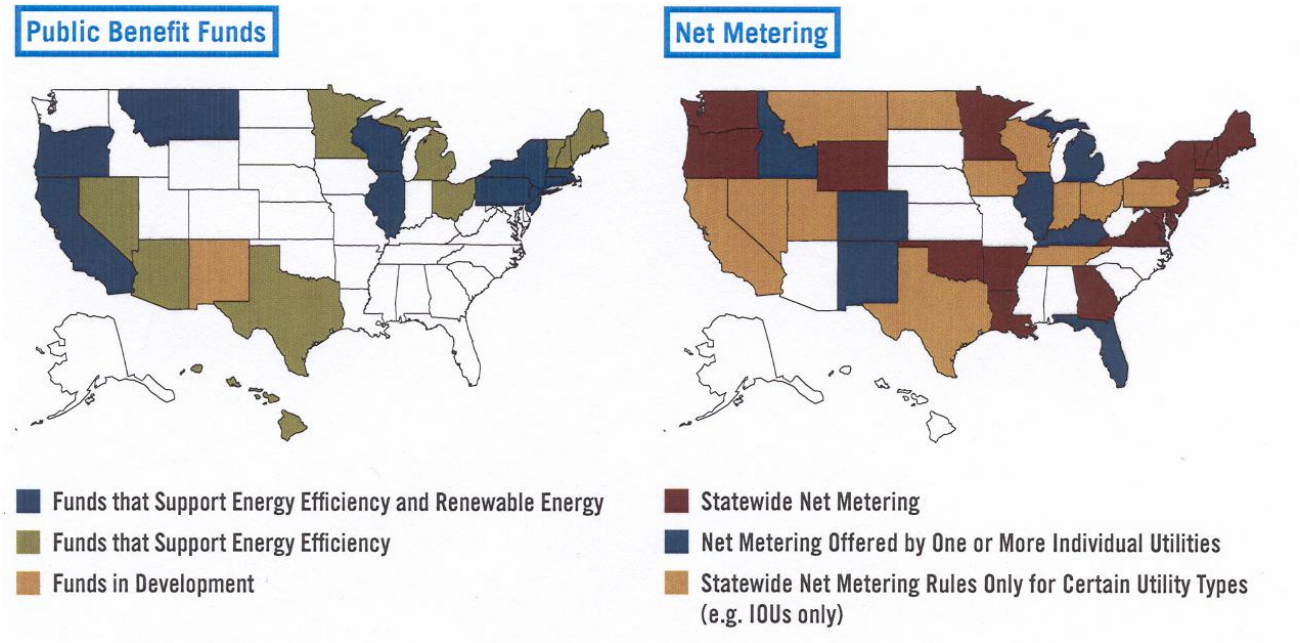
Figure 1[2]



Public Benefit Funds and Net Metering:

About half the states have established funds, typically called "public benefit funds," that reflect a charge placed on consumer bills or contributions from utilities and are used for energy efficiency and renewable energy investments. Utility companies in 41 states have "net metering," where they allow customers to sell electricity they produce back to the grid.

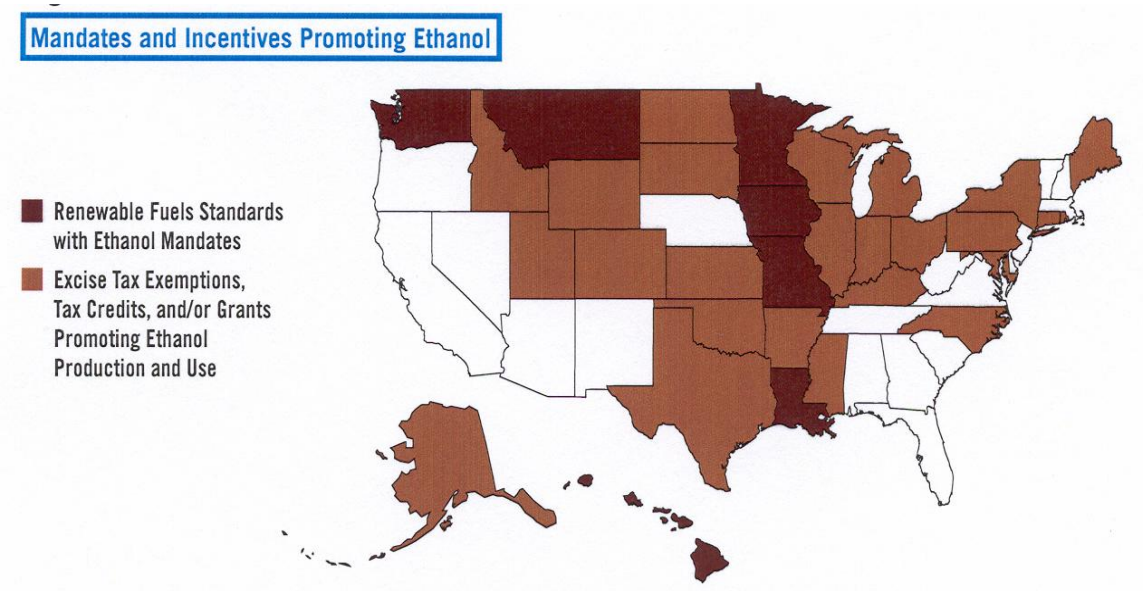
Figure 2[3]



Promoting Ethanol

More than half the states provide some kind of incentive to encourage the use of alternative fuels and alternative-fuel vehicles, and 23 states provide incentives to encourage ethanol production and use. Seven states have in place Renewable Fuel Standards that set a target for the percentage of renewable fuel such as ethanol or biodiesel to be sold in the state.[4]

Figure 3[5]



Western Governors' Association

The Western Governors' Association's "Clean and Diversified Energy Initiative" promotes energy efficiency, renewable energy development, and carbon sequestration. The WGA and the California Energy Commission are working together to provide information about renewable energy generation, called the Western Renewable Energy Generation Information System (WREGIS), aimed at sharing information and, eventually, encouraging trading of renewable energy credits. The WGA also agreed to a Future Transportation Fuels Initiative in 2006 and is assisting regional carbon sequestration partnerships

Greenhouse Gas Registries

Greenhouse gas registries are databases that receive and store data on GHG emissions. They can play an important role in documenting emissions and ensuring that early reductions are given credit in subsequent regulatory programs and providing accurate and credible information for designing voluntary and mandatory GHG management programs. The following registries are in place:

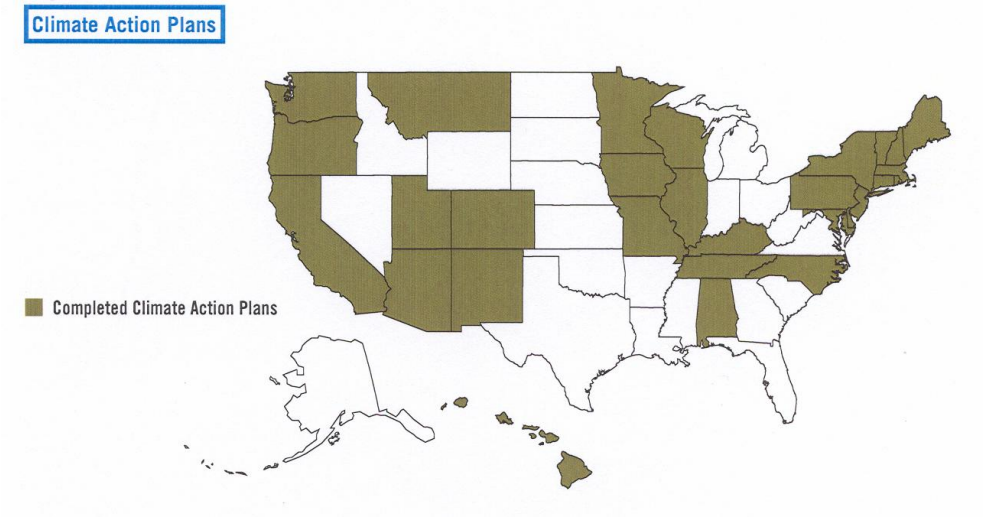
- Department of Energy's 1605(b) Voluntary GHG Registry
- California Climate Action Registry (71 members)
- Eastern Climate Registry (19 northeast and mid-Atlantic states)
- Midwest States (6 states)
- Chicago Climate Exchange (GHG reduction and trading program)

The California Climate Action Registry is particularly important. The California Air Resources Board to publish in 6/07 a list of early action measures that can be given credit for early reductions. The registry is working with other states to develop a multi-state registry.[6] All but the Department of Energy's registry uses a protocol developed by the World Resources Institute/World Business Council on Sustainable Development.[7] The Western Regional Air Partnership is working with Western states to develop a voluntary GHG registry and held a workshop in 7/06 to discuss the experience of California in creating its registry, types of registries, and options for multi-state registries.[8]

Climate Action Plans

Twenty-eight states have adopted climate action plans that include provisions aimed at reducing GHG emissions.

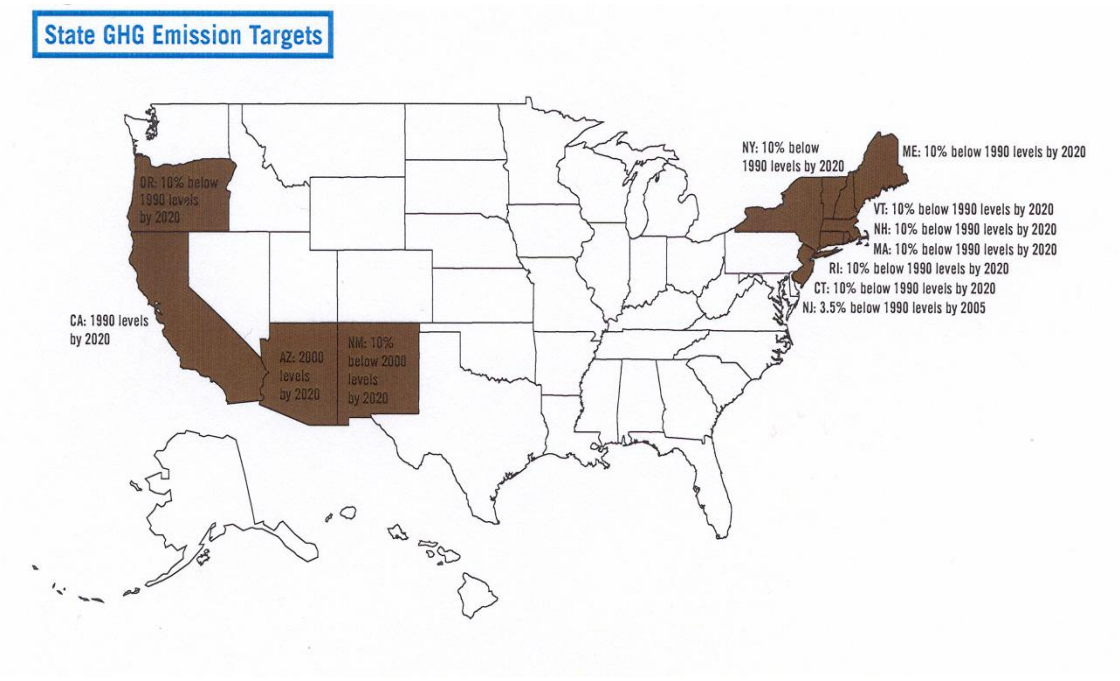
Figure 4[9]



GHG Emission Targets

Twelve states have statewide GHG emissions targets that require emissions to return to or below 1990 or 2000 levels.

Figure 5[10]



Other GHG Emissions Reduction Policies:

Several states regulate carbon dioxide emissions from power plants.[11]

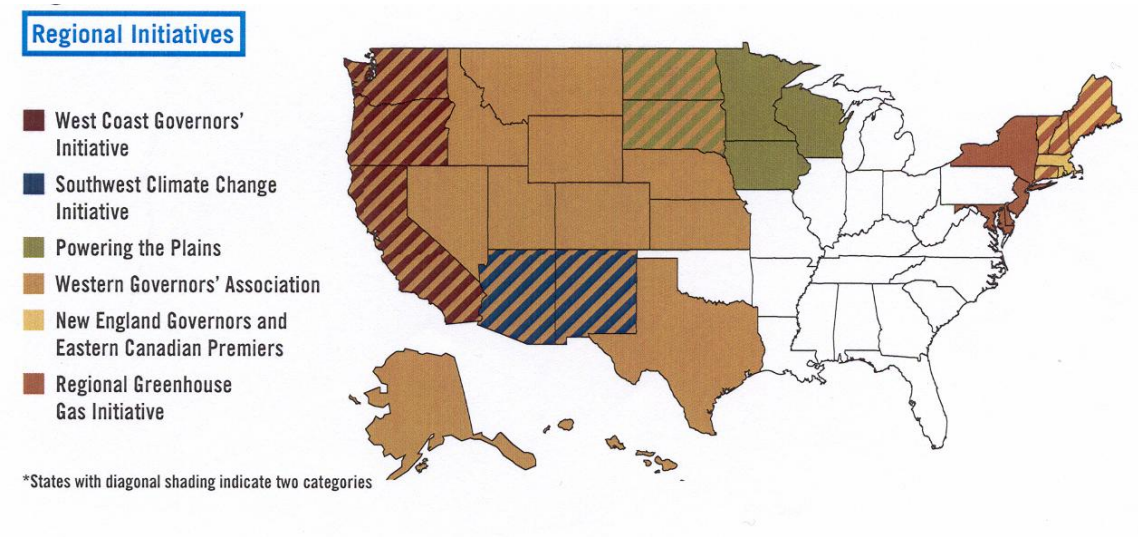
- Washington and Oregon require new plants to offset part of their emissions by reducing their emissions elsewhere or contributing to a fund that finances projects elsewhere to reduce CO2 emissions or sequester carbon.

- Massachusetts and New Hampshire require existing power plants to reduce their CO2 emissions.

California requires GHG emissions from new light-duty vehicles sold in the state by 30 percent by 2016; the requirement is on hold pending a court challenge. Eleven states have announced they will enact California's GHG standards (Arizona, Connecticut, Maine, Massachusetts, New Jersey, New York, Oregon, Pennsylvania, Rhode Island, and Washington).[12]

In sum, states in the western half of the United States and in New England are engaged in some kind of regional energy and/or greenhouse gas initiative, as show in Figure 6.

Figure 6[13]



3. Current Utah Clean Energy Policies

Renewable Energy Systems Tax Credit--Corporate Tax Credit

Utah's corporate income tax credit for renewable energy systems applies to 10% of the cost of installation of a system up to $50,000. Eligible technologies include active and passive solar systems, photovoltaics, biomass, hydropower, and wind. For residential buildings owned by the business, the credit is 25% of the cost of installation of a system up to a maximum credit of $2,000 per system. This tax credit expires on December 31, 2006.[14] This tax credit is currently being reviewed by the Legislature.

Renewable Energy Systems Tax Credit - Personal Tax Credit

Utah's individual income tax credit for renewable energy systems on residential buildings applies to 25% of the cost of installation of a system up to a maximum credit of $2,000 per system. Eligible technologies include active and passive solar systems, wind, biomass, or hydroenergy. The tax credit applies to systems placed in service from January 1, 2001, through December 31, 2006. There is also a corporate tax credit which applies to 10% of the cost of installation of a system up to a maximum credit of $50,000.[15] This tax credit is currently being considered for reauthorization in the 2007 legislative session.

Renewable Energy Sales Tax Exemption

Utah Code exempts the purchase or lease of equipment used to generate electricity from renewable resources from the state sales tax. Eligible purchases or leases must be made for or by a renewable energy production facility on or after July 1, 2004 and before June 30, 2009. All leases must

be made for at least seven years. Renewable resources include wind generation, solar, biomass, landfill gas, anaerobic digestion, hydroelectricity, and geothermal energy. Eligible facilities must use renewable energy to produce electricity and have a production capacity of 20 kW or greater. A facility that has its generation capacity increased by one or more MW as a result of the machinery or equipment may also be eligible for the exemption. Equipment eligible for the exemption includes wind turbines, generating equipment, control and monitoring systems, power lines, substation equipment, lighting, fencing, pipes and other equipment for locating power lines and poles. Equipment not eligible for the exemption includes tools and other equipment used in construction of a new facility, contracted services required for construction and routine maintenance activities and equipment utilized or acquired after the project is operational. This exemption is scheduled to be repealed on June 30, 2009.[16]

State Building Energy Efficiency Program

On March 17, 2006, House Bill 80 was enacted in Utah, amending and updating state energy efficiency policy. The Division of Facilities Construction and Management is required to administer the State Building Energy Efficiency Program. The Division is responsible for developing guidelines and procedures for energy efficiency in state facilities, and assisting state agencies, commissions, divisions, boards, departments, and institutions of higher education in implementing these procedures into their facilities. Additionally, the Division is charged with developing incentives that promote energy conservation and the reduction of energy costs in state buildings, procuring energy efficient products when practicable, analyzing state agencies' energy consumption, establishing an advisory group to assist with the development and implementation of the State Building Energy Efficiency program, and providing a yearly energy savings report, including long-term strategies and goals, to both the governor and the legislature.

The State Building Board is required to work in conjunction with the Division to establish design criteria, standards, and procedures for the planning, design, and construction of new state buildings and improvements to existing state facilities. Among other outcomes of a proposed building project, life-cycle costing of the most prudent cost of owning and operating the facility, in addition to other analyses, must address the expected energy efficiency of a given facility.

Each state entity must develop a program to manage energy efficiency and cost conservation and to appoint a staff member to coordinate the energy efficiency program. Agencies may enter into an energy savings agreement for a term of up to 20 years.[17]

Net Metering

Utah's net-metering law, enacted in 2002, requires all electric utilities and cooperatives (municipal utilities are excluded) to allow customers to connect renewable energy systems to the grid for their own use and to supply excess electricity to the electric grid. Eligible renewable energy systems include fuel cells, solar, wind or small hydropower facilities with a generating capacity of up to 25 kilowatts. Total participation in the program is capped at 0.1% of the cumulative generating capacity of the electrical corporation's peak demand during 2001. If a customer generates more electricity than the customer uses during a billing period, the utility must credit the customer for the net excess generation (NEG) at a rate equal to the utility's avoided cost or higher.[18]

Solar Access Laws and Solar Easements

Utah's solar easement provisions are similar to easement provisions in many other states. Parties can voluntarily enter into written solar easement contracts which are enforceable by law. A solar

easement, once created, runs with the land and does not terminate unless specified by conditions of the easement. State statute stipulates that local zoning authorities may adopt regulations that mandate solar access and specifically grants legislative bodies the right to refuse or renew any plat or subdivision plan if deed restrictions, covenants or other agreements running with the land prohibit or have the effect of prohibiting reasonably sited and designed solar collectors or other renewable resource devices.[19]

Utility Green Pricing Programs

The Department of Energy's Energy Efficiency and Renewable Energy program provides data on the Green Power Network. It reports that the following green power products are available in Utah:[20]

Utility Green Pricing Programs as of July 2006					
State	**Utility Name**	**Program Name**	**Type**	**Start Date**	**Premium**
UT	City of St. George	Clean Green Power	wind, small hydro	2005	2.95¢/kWh
UT	Deseret Power	GreenWay	various	2004	1.95¢/kWh
UT	Pacificorp: Utah Power	Blue Sky	wind	2000	1.95¢/kWh
UT	Tri-State Generation & Transmission: Empire Electric Association, Inc.	Renewable Resource Power Service	wind, hydro	2001	1.25¢/kWh

Rocky Mountain Power - Cool Cash Incentive

The 2006 Cool Cash Incentive program provides cash incentives for the purchase and home installation of qualifying high-efficiency evaporative cooling and central air conditioning systems, ENERGY STAR® programmable thermostats and best practice central air conditioning installations. Incentives are available through December 31, 2006.[21]

Rocky Mountain Power - Refrigerator Recycling Program

Rocky Mountain Power offers a $40 rebate for recycling an old refrigerator/freezer. The incentive is available to Rocky Mountain Power's residential customers in Utah.[22]

Advancing Energy Efficiency[23]

Governor Jon Huntsman has established a goal for increasing energy efficiency in state facilities by 20% by 2015. The elements of the state energy efficiency plan include the following:

- The Western Governor's Association has set a goal of 20% increase in energy efficiency by 2020. Utah will work to meet this goal in advance of this target with an objective date of 2015, thereby saving Utah's citizens and businesses energy and money.
- The American Institute of Architects (AIA) recently called for architects to reduce usage of fossil fuels in the construction and operation of new buildings by 50% by 2010. The State will cooperate with AIA in meeting their goals in Utah.
- Encourage energy efficiency in Utah's manufacturing, industrial and agriculture sectors.

- Encourage efficiency in energy generation and distribution. The state will encourage utilities and other energy producers and distributors to seek cost effective methods to reduce energy losses in the production and distribution of energy.

Saving Energy and Money in State-owned Buildings

Advanced Building Design Standards for State-owned Buildings

- The State will expand current energy design standards administered by the Division of Facilities and Construction Management (DFCM) in the Department of Administrative Services (DAS). The current level calls for 10% lower than a code minimum building. An advisory group composed of representatives of state agencies and institutions will assist in setting goals and the development of three programs for capital improvement and new construction of State-owned buildings:
    - Energy Efficient Products, a program that incorporates and standardizes energy efficient products and equipment in State buildings
    - Energy Design Standards, which sets the minimum requirement for energy design of the building envelope, mechanical systems, lighting systems, service water heating, power, and other equipment
    - High Performance Building Rating System, a program that promotes energy efficiency, water conservation, indoor environment improvements, and sustainability through market transformation in new construction and major renovations.
    - The State will enhance quality control, accountability and training to ensure State government reaps the savings of the Advanced Building Design Standards.
    - The State will work with communities to enhance training and accountability

Energy Efficiency for State-owned Buildings

- The State will establish an energy efficiency advisory group, composed of state administrators and staff from respective state agencies, as a forum to share knowledge and experience in the design and implementation of energy efficiency programs.
    - Utility Energy-Efficiency Contract, a demand side management services provided by Utah Power to improve the efficiency of use of electricity in State buildings.
    - Energy-Savings Performance Contract, a contract that provides performance of services for the design, acquisition, financing, installation, testing, operation, and other services. Payment to the contractor is realized through a guaranteed stream of future energy and cost savings.
    - Energy Efficiency Projects, which result in cost effective savings of commodities (electricity, gas, water, etc.) in State buildings. Funding of these projects will be obtained from the Capital Improvement funds and other funding mechanism. Programs will build on currently established third party standards, such as the US EPA's Energy Star Program.
    - Re-commissioning Program, a program to tune-up mechanical systems and optimize

efficiency in State buildings.

- The state will consider a process where all capital improvements for existing state-owned buildings are explicitly reviewed for energy impacts.
- All state buildings should have the most efficient lighting installed. Through the State, we will work to establish an aggressive timeline for incorporating efficient lighting in the state's 42 million square feet of floor space.

- Agencies and institutions with authoritative responsibility to implement energy-saving programs for buildings shall request funding from the legislature necessary to achieve the goals of this policy. To reduce state's obligations, the agencies shall seek other funding sources including funds from Utility Energy-Efficiency Contracts, Federal Grants, Energy-Savings Performance Contracts, Petroleum Violation Escrow Fund (PVE), and other private funding sources.
- The State will enhance the State Buildings Energy Efficiency Program (SBEEP) through DFCM by (1) funding additional staff and (2) assigning responsibility and accountability for design and implementation of programs to DFCM.
- Efforts will enhance our education programs, such as the Building Operators Certification Partnership.

Energy Standards for K-12 Schools

- The State will work with the Board of Education to design a peer review of public schools to assess energy efficiency potential and create means to increase efficiency in new and existing schools.

Energy Efficiency for State Transportation

- The State will continue to use fuel-efficient vehicles, such as compressed natural gas and hybrids, within the State fleet and look to identify other efficient supply alternatives.
- The State will work with local entities (fueling stations, natural gas suppliers) to enhance the provision of natural gas fuel stations throughout the State.
- The State will encourage the Legislature to continue to help state agencies subsidize state employee use of public transportation through the eco-pass program.
- The state will give priority to locating new state facilities near light rail and commuter rails lines to provide better access for state employees to public transportation.

On-site Renewable Energy and Combined Heat and Power

- State government will establish programs to install on-site renewable energy sources to reduce energy consumption by 2% by 2015 compared to 2005 levels (We will work through the advisory committee to refine these goals). In particular, the state will require that distributed renewable self-generation options be evaluated in all new state building designs and retrofits.
- Currently, the Governor's office in coordination with Utah Geological Surveys (UGS) and the State Energy Program (SEP) is assisting in the funding of a 1.28-kw solar power and demonstration project on the Department of Natural Resources (DNR)facility located on North

Temple in Slat Lake city.

- The state is also supporting with funding and in partnership with other entities the installation of solar projects at State Parks.
- The State will encourage and implement combined heat and power, where feasible.

Energy Efficiency in the Private Sector

Collaborate with Utilities, Regulators, and Private Sector

- To identify and remove barriers
- To create or expand efficiency programs
- To assist utilities in ensuring that efficiency programs are effective, attainable, and feasible to implement.
    - The state will facilitate development of high efficiency energy resources, electrical generation, transmission and distribution systems that will provide cost effective, clean and sustainable energy to end users.
    - Encourage efficiency in Utah industry and manufacturing
    - Work with Utah Industries of the Future to promote education and training activities from the US DOE Energy Efficiency and Renewable Energy (EERE) and Office of Industrial Technology program, the US Department of Agriculture and the US Environmental Protection Agency Energy Star program.
    - Promote cooperation and coordination between The State of Utah's economic development activities and energy efficiency resources such as utility programs, educational activities and public-private sector initiatives that support efficiency.
    - Encourage efficiency in transportation sector
        - Incentives for clean and fuel-efficient vehicles
        - Support of and funding for public transportation improvements

Improve Building Code Requirements, Compliance, Training, and Enforcement

- In coordination with other efforts in the state, we will commission a Baseline Energy Study for residential and commercial building sectors to characterize the building stock, identify shortfalls in compliance with the Energy Codes, benchmark policy goals, and provide recommendations to capture energy savings from deficits and to promote additional energy savings beyond code. The Baseline Energy Study shall be repeated every three years in sequence with the adoption of new energy codes.
- Ongoing training and education of building inspectors
- Ensure adequate funding is available to achieve building code enforcement
- Encourage private sector builders to exceed energy efficiency codes by promoting the use the State's Advanced Building Design Standards.

Develop Policies to Implement Goals of State Energy Efficiency Plan

The state will work with local and county governments to share ideas and evaluate policy options and goals.

Energy Efficiency Education and Outreach

- On-Going Training and Education of Architects, Contractors, Engineers, and Building Maintenance
    - Training Building Officials
    - Training with ASHRAE for engineers and architects (currently coordinating with SEP to deliver Energy Code on May 4-5, 2006)
    - For operational improvements in new buildings the State will work to develop a training program for building managers, operators and project managers to educate facilities personnel in the energy and resource efficiency operation and maintenance of buildings systems (e.g. Building Operator Certification Program is offered by the Northeast Energy Efficiency Partnership)
    - General Public Outreach and Education

4. Detailed List of Energy and Climate Policy Options (See EPA spreadsheet of policy options)

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[1] Websites:
Arizona: www.azclimatechange.us
New Mexico: www.nmclimatechange.us
Colorado: www.coloradoclimate.org
Montana: www.mtclimatechange.us
Oregon: www.sustainableoregon.net/documents/climate/Oregon_strategy_Final_Report.pdf
California: www.climatechange.ca.gov
West Coast Governors: www.climatechange.ca/gov/westcoast/index.html
Regional Greenhouse Gas Initiative: http://www.rggi.org/index.htm
Midwest Regional GHG Registry: http://www.ladco.org/reports/rpo/Regional%20Gas%20Registry/Midwest_Registry_Work_Plan%20_V2__30Nov05_revised.pdf
[2] Pew Center on Global Climate Change, Climate Change 101: State Action, at 3.
[3] Id, at 4.
[4] Id., at 5-6.
[5] Id., at 5.
[6] See www.climateregistry.org
[7] See www.wri.org
[8] See http://www.wrapair.org/WRAP/meetings/060717reg/index.html
[9] Pew Center on Global Climate Change, at 6.
[10] Id., at 7.
[11] Id., at 4.
[12] Id, at 5.
[13] Id., at 2.
[14] Utah Code Annotated 59-10-134; R637-1. Utah Energy Saving Systems Tax Credit (ESSTC) Rules; http://www.energy.utah.gov/taxcred1.htm.

[15] http://www.energy.utah.gov/taxcred1.htm; Utah Code Annotated 59-10-134; R637-1. Utah Energy Saving Systems Tax Credit (ESSTC) Rules.
[16] UT Revenue and Taxation Code 59-12-104
[17] http://www.dfcm.state.ut.us/const_energy.php; UT HB 80 (2006)
[18] http://geology.utah.gov/sep/incentives/rincentives.htm#netmeter; Utah Code § 54-15-1-1 et seq.
[19] http://attorneygeneral.utah.gov/environment.html; UCA 10-9-901; 17-27-901; 57-13-1; 57-13-2.
[20] National Renewable Energy Laboratory, Golden, Colorado. Company and product listings do not represent endorsement by either the National Renewable Energy Laboratory or the U.S. Department of Energy.
http://www.eere.energy.gov/greenpower/buying/buying_power.shtml?state=UT
[21] http://www.utahpower.net/Article/Article25681.html
[22] http://www.utahpower.net/Article/Article28603.html
[23] http://energy.utah.gov/energy/policy/utah_policy_to_advance_energy_efficiency_in_the_state.html